

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

HYDRO-PHOTON, INC.,
Plaintiff,

v.

MERIDIAN DESIGN, INC.,
Defendant.

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) C.A. No. 05-11240 GAO
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**DEFENDANT’S RESPONSE TO PLAINTIFF’S “MEMORANDUM IN OPPOSITION
TO DEFENDANT MERIDIAN DESIGN, INC.’S MOTION FOR SUMMARY
JUDGMENT OF NONINFRINGEMENT, AND IN SUPPORT OF PLAINTIFF’S CROSS-
MOTION FOR PARTIAL SUMMARY JUDGMENT OF INFRINGEMENT”**

Defendant Meridian Design, Inc. (“Meridian”) submits this Memorandum in opposition to Plaintiff Hydro-Photon, Inc.’s (“Hydro-Photon’s”) cross-motion for partial summary judgment of infringement (Dkt. No. 20).

Hydro-Photon’s cross-motion should be denied because Meridian’s accused AquaStarTM products¹ do not include a “control means for turning the light source on an off,” when properly construed, as required by claim 7 of U.S. Patent No. 6,110,424 (“the ‘424 patent”). Further, Hydro-Photon’s cross-motion completely fails to make out a cognizable case of patent infringement.

¹ Samples of the accused AquaStarTM and AquaStarPlus!TM products were submitted to the Court with Meridian’s Motion for Summary Judgment of non-infringement. (Dkt. No. 15)

I. PLAINTIFF’S CROSS-MOTION FAILS BECAUSE MERIDIAN’S ACCUSED AQUASTAR™ PRODUCTS DO NOT INCLUDE A “CONTROL MEANS”

For its cross-motion to succeed, Hydro-Photon would need to establish that each and every limitation of claim 7 is present in Meridian’s accused AquaStar™ products. *See Kahn v. General Motors Corp.*, 135 F.3d 1472, 1476-78 (Fed. Cir. 1998). This means that the “control means” limitation of independent claim 7 would have to be found in Meridian’s AquaStar™ water purifiers. Contrary to Hydro-Photon’s arguments in its memorandum (“Hydro-Photon’s Mem.”) (Dkt. No. 21), for the reasons set forth in Meridian’s Memorandum in Support of Defendant Meridian Design, Inc.’s Motion for Summary Judgment of Non-Infringement (Dkt. No. 16) and as set forth herein, Meridian’s accused product does not include a “control means.”

A. The Disclosed Structure That Performs the Claimed Function Includes a Liquid Level Sensor

Hydro-Photon asserts that the structure corresponding to the recited function of Claim 7’s “control means” limitation is only that part of the structure disclosed in the specification that performs the recited function, not structures that “merely enable or improve the performance of the function.” Hydro-Photon’s Mem. at 4. Hydro-Photon further asserts that the only structures disclosed in the specification that perform the recited function of “turning the light source on and off” are the on-off switch (28) and switches that the specification indicates connect and disconnect the power source and the lamp. *Id.* at 5. To attempt to support this argument, Hydro-Photon cites several passages from the specification (*id.*), but conspicuously omits the most relevant sentence in the specification.

In particular, the specification makes clear that ***“the lighting of the lamp is ultimately controlled by the liquid-level sensor 20, such that the lamp lights only when both the on-off switch 28 is in the on position and the lamp is fully immersed in water.”*** ‘424 patent, col. 3,

lines 8-12 (emphasis added).² Following this, as Hydro-Photon itself quotes from the specification, “[w]hen the liquid-level sensor 20 determines that the lamp is fully immersed in the water, the sensor closes the switches (not shown) that separate the ballast circuitry 13 and the battery 14 (FIG. 1) from the lamp 12, and the lamp then turns on.” *Id.*, col. 3, lines 33-37. Thus, the structure for performing the recited function of “turning the light switch on and off” is the combination of a liquid-level sensor and an on-off switch, and the structural equivalents of such a combination.

Like the “switches” Hydro-Photon has cited, the liquid-level sensor is a necessary part of the circuit for turning on the light source. The liquid-level sensor must be in the “on” position, i.e., determining that the lamp is fully immersed in water, just as the on-off switch must be in the “on” position. Moreover, the liquid-level sensor is fully capable of turning the light source off (which is a part of the recited function) when it determines that the light source is not fully immersed in water, i.e., in the “off” position, just as the on-off switch turns the light source off when it is in the “off” position. The on-off switch and the switches between the power source and the lamp do not by themselves perform the function of turning the light source on and off according to the specification of the ‘424 patent. Thus, the liquid-level sensor is required by the specification of the ‘424 patent to actually perform the recited function of turning the light source on and off. The liquid-level sensor does not simply “prevent” the light source from turning on if water is not sensed, but rather turns the light source on when water is detected (and the on-off switch is in the on position), and off when water is not detected.

² Hydro-Photon’s memorandum fails to address this statement in the specification or provide an explanation for how its proposed construction provides structure “such that the lamp lights only when both the on-off switch 28 is in the on position and the lamp is fully immersed in water.” Plaintiff’s silence on this issue speaks volumes with respect to the merits of their position.

Meridian’s construction of “control means” is based on the corresponding structure in the specification of the ‘424 patent. This construction does not depend on the fact that the specification only discloses a “single embodiment,” and it does improperly import a limitation into the claim from the specification. In fact, the patentee clearly intended to include a liquid-level sensor in this claim limitation because he chose to use the means-plus-function format,³ which necessarily refers to the corresponding structure in the specification, i.e., a liquid level sensor that *ultimately controls* the lighting of the lamp such that the lamp lights only when both the on-off switch is in the on position and the lamp is fully immersed in water.

B. The Doctrine of Claim Differentiation Does Not Apply to Exclude a Liquid Level Sensor from the “Control Means”

Hydro-Photon misconstrues the case law regarding doctrine of claim differentiation to argue that the “control means” does not include a liquid-level sensor. The doctrine of claim differentiation does not apply to exclude a liquid-level sensor from the “control means” because claims 7 and 8 have different scope.

In fact, Hydro-Photon can only at best assert that claim 7 has “essentially” the same scope as claim 8, not that the claims have exactly the same scope. That is because claims 7 and 8 have *different* scope. Hydro-Photon fails to address the law Meridian cited in its opening memorandum “that independent claims containing means-plus-function limitations do not have the same literal scope as dependent claim reciting specifically the structure that performs the stated function.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1313

³ Notably, claim 7 includes the term “control means for turning the light source on and off,” rather than reciting an on-off switch (or any other structure), which might have performed the operation of a simple on-off switch Hydro-Photon now seeks to claim. Thus, the patentee was clearly claiming something more than a mere “switch” for turning the light source on and off.

(Fed. Cir. 2001); *See also Latriam Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991). These cases hold that an independent claim containing a mean plus function limitation includes certain structural equivalents within its literal scope, whereas the dependent claim to the specific structure does not. Meridian is not arguing that means-plus-function limitations must be interpreted without regard to other claims, but rather that 35 U.S.C. § 112 ¶ 6 statutorily mandates that a means-plus-function limitation includes “structural equivalents,” which are of a greater scope than the disclosed structures themselves. In this case, claim 7 includes both the combination of a liquid-level sensor and an on-off switch and structural equivalents of such a combination, while claim 8 limits claim 7 by eliminating the structural equivalents from the literal scope of claim 8. Thus, the doctrine of claim differentiation does not apply to exclude a liquid-level sensor from the “control means.”

Finally, Hydro-Photon claims that Meridian has offered no explanation for why the “liquid-level sensor” is recited in claim 8 but not in claim 7. The explanation is simple: poor claim drafting by Hydro-Photon and its patent prosecution counsel. This is not surprising, since claim 10 of the ‘424 patent erroneously recites “the means for turning on the light source” when it clearly should have referred to the “control means for turning the light source on and off” as that limitation was amended in claim 7. It is clear that in drafting claim 7, Hydro-Photon either ignored the significance of the means-plus-function claim language, which necessarily relates to the disclosed structure of a liquid-level sensor which ultimately controls the lighting of the lamp, or is choosing to do so now in an improper attempt to expand the scope of its limited patent monopoly.

C. Plaintiff Has Misconstrued the Prosecution History to Attempt to Alter the Construction of “Control Means”

In its memorandum at pages 9-12, Hydro-Photon weaves an elaborate tale from the prosecution history of the ‘424 patent in an attempt to alter the clear construction of the “control means” limitation that is properly based on the patent specification. However, Hydro-Photon’s argument is irrelevant to the present issue. Regardless of whether Hydro-Photon told the patent examiner that it did not consider the liquid-level sensor to be a required part of the “broadest invention,” a fact which Meridian disputes, Hydro-Photon used the statutory means-plus-function language in claim 7, which necessarily *requires* reference to the disclosed structure (and structural equivalents) in the specification. Clearly, from a plain reading of the specification, the invention described in the ‘424 patents includes a light that is ultimately controlled by a liquid-level sensor.

Hydro-Photon also misconstrues the applicable case law when it asserts that the amendment that resulted in the “control means” limitation during prosecution of the ‘424 patent was not a narrowing amendment that precludes application of the doctrine of equivalents because “[t]here is nothing in the Remarks section of this Amendment to suggest that the changes to the ‘control means’ limitation were being made to distinguish over prior art.” Hydro-Photon’s Mem. at 12; *cf. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1366-67 (Fed. Cir. 2003) (en banc) (“When the prosecution history record reveals no reason for the narrowing amendment, *Warner Jenkinson* presumes that the patentee had a substantial reason relating to patentability...”). Hydro-Photon, as the patentee, is the party that has the burden of establishing that this narrowing amendment was not made for reasons related to patentability. *Id.* at 1367. (“[T]he patentee must show that the reason for the amendment was not one relating to patentability if it is to rebut that presumption” otherwise prosecution history estoppel shall

apply). In fact, there is a presumption that the narrowing amendment was made for reasons related to patentability. *Warner-Jenkinson Co., v. Hilton Davis Chem. Co.*, 520 U.S. 17, 41 (1997), (“Where the patent-holder is unable to establish [that an amendment required during prosecution had a purpose unrelated to patentability], a court should presume that the purpose behind the required amendment is such the prosecution history estoppel would apply”). Hydro-Photon’s memorandum fails to even attempt to establish another reason for the amendment, and, in fact, cannot do so because such an argument would ignore the Remarks section of the Amendment.

Thus, nothing in the prosecution history expressly alters the construction of “control means” from including a liquid-level sensor.

D. The Accused AquaStar™ Product Does Not Include a Liquid-Level Sensor

In its memorandum, Hydro-Photon unfaithfully attempts to raise an issue of fact regarding the presence of a liquid-level sensor in the accused AquaStar™ products by asserting that Meridian’s representations regarding the AquaStar™ “are all phrased in the present tense.” Hydro-Photon’s Mem. at 3 n.2. Hydro-Photon’s assertion is pure conjecture, insufficient to establish a genuine issue of material fact. *Stryker Corp. v. Davol Inc.*, 234 F.3d 1252, 1257 (Fed. Cir. 2000) (“In the absence of evidence that the accused [device] is presently capable of [performing the claimed limitation], the court properly granted summary judgment of non-infringement...”) (citing *High Tech Med. Instrumentation v. New Image Ind., Inc.*, 49 F.3d 1551, 1555, (Fed. Cir. 1995) (“[A] device does not infringe simply because it is possible to alter it in a way that would satisfy all the limitations of a patent claim.” See *Hap Corp. v. Heyman Mfg. Co.*, 311 F.2d 839, 843 (1st Cir. 1962) (“The question is not what [a device] might have been made to do, but what it was intended to do and did do. . . . [T]hat a device could have been made to do

something else does not of itself establish infringement.’) To survive summary judgment Hydro-Photon would have had to point to evidence of such a liquid level sensor in a past or present product, which it should have been able to provide if it existed because Hydro-Photon was obligated under Fed. R. Civ. P. 11 to examine the accused products and compare them to the asserted claims prior to initiating this suit. Hydro-Photon has no such evidence, and the AquaStarTM water purifiers do not include and have never included a liquid-level sensor.

To make it perfectly clear, as Meridian’s Chief Operating Officer Dan Matthews states in his Second Declaration submitted herewith, Meridian’s AquaStarTM products do not include and have never included a liquid level sensor. Second Matthews Dec. ¶ 2. Nor does the AquaStarTM product contain a liquid level sensor that has been disconnected or disabled temporarily pending disposition of this action. *Id.* ¶ 3. This is borne out by the fact that any AquaStarTM product that Meridian has ever made or sold can be turned on in the absence of water and will not turn off when removed from the water. *Id.* ¶ 4. Hydro-Photon can proffer no evidence to the contrary. In fact, even though Hydro-Photon’s declarant, Miles Maiden, asserts that he disassembled and examined the accused AquaStarTM products, a liquid-level sensor is conspicuously missing from the list of features he claims to have found in them.

Hydro-Photon also improperly tries to fabricate a disputed material fact by referring to a gold probe or pin that is found in some of the AquaStarTM products. Hydro-Photon Mem. at 13. In fact, the gold pin to which Hydro-Photon refers is a gold-colored “ground” pin, which prevents a buildup of electrical charge. The gold ground pin is not even part of the AquaStarTM products’ circuit, but rather simply provides a ground connection. Second Matthews Dec. ¶ 5. The gold ground pin is not a probe that detects the presence of water, but rather allows electrical

charge from the circuit to be discharged, either into the air or into water that contacts the pin. *Id.* ¶ 5.

The gold ground pin is not connected to a sensory input of any component of the product's circuit and cannot be used to detect water. *Id.* ¶ 6. It was included the less expensive version of Meridian Design's products because a gas discharge lamp will light more easily if an electrical ground is placed near the lamp. In general, ultraviolet and fluorescent tubes are easier to start or "fire" if their tube wall is grounded. The presence of the gold ground pin is premised on the fact that water may be used to ground the tube wall to the gold ground pin if a user is having problems firing the lamp (e.g., when a device's battery is old and needs to be replaced). *Id.* ¶ 7. Thus, the gold ground pin helps fire the lamp, in occasional circumstances where it is difficult to do so, by making contact with water.⁴ *Id.* In all cases, the AquaStar™ products will turn on in the absence of water, even if it takes some additional effort, and will not turn off if removed from water, because they do not include a liquid-level sensor. *Id.* ¶ 8.

Moreover, Meridian's website and product literature do not suggest that the gold ground pin is a "safety feature such that the UV lamp will not turn on if the water in the bottle is not at a sufficiently high level." Hydro-Photon Mem. at 14. When the references indicate that "if the ultraviolet lamp in the AquaStar™ products does not turn on, the user should check to be sure that the water in the bottle is at a level that it contacts" the gold pin, they mean that grounding the product's circuit using the water will help the bulb turn on in those occasional circumstances in which it is difficult to fire the lamp (e.g., when the battery is old and needs to be replaced).

⁴ Meridian has subsequently abandoned the use of the gold probe, particularly in the AquaStar™ Plus! Products, by firing the lamp at a higher voltage initially. Second Matthews Dec. ¶ 9.

Second Matthews Dec. ¶ 9. It is only Hydro-Photon’s twisting of the language of the references that would suggest any features of the AquaStarTM products function as a liquid-level sensor.

Hydro-Photon’s further attempt to create a disputed material fact regarding the presence of a liquid-level sensor based on Meridian’s pending patent application is legal erroneous. Hydro-Photon Mem. at 14-16. The law is clear that infringement must be based on an actual device or product accused of infringement, not on a contemplated or hypothetical product in a patent application that an accused infringer may or may not make. *Decade Industries v. Wood Tech., Inc.*, 100 F.Supp.2d 979, 982 (Fed. Cir. 2000) (“[I]t is axiomatic that the court determines infringement by comparing the allegedly infringing product, not the alleged infringer’s patent, to the claimed design.”) *Chemical Engineering Corp. v. Essef Industries, Inc.*, 795 F.2d 1565, 1569 n.6 (Fed. Cir. 1986) (an accused infringer’s patent is not relevant to the determination of infringement). As explained above, the accused AquaStarTM products do not include and have never included a liquid-level sensor. Not only is Meridian’s patent application irrelevant to the issue of infringement by the accused product, it is not even true that a water detection feature has ever been included in an AquaStarTM product. Second Matthews Dec. ¶ 10 (stating that the AquaStarTM product has never employed a circuit with a water detect feature, and that the water detect feature described in the patent application was never implemented.).

Therefore, the accused AquaStarTM product does not include a liquid-level sensor, which is a required element of the “control means” of claim 7.

II. PLAINTIFF’S CROSS-MOTION FAILS TO ESTABLISH ITS INFRINGEMENT CLAIM

Hydro-Photon’s cross-motion for summary judgment that Meridian’s accused AquaStarTM product literally infringes claim 7 of the ‘424 patent borders on *frivolous*. In its

memorandum, Hydro-Photon does not even come close to establishing that each and every limitation of claim 7 is present in the accused products.

Most egregiously, Hydro-Photon's cross-motion for infringement improperly relies on Meridian's pending patent application to attempt to establish the presence of the elements of claim 7, including the disputed "control means." Hydro-Photon Mem. at 17 ("That the other limitations of claim 7 are literally satisfied is confirmed by other parts of the MDI [Meridian] patent application."). As explained above, a claim for infringement must be based on the actual devices manufactured or sold—not on a contemplated or hypothetical embodiments described in a patent application. *Decade Industries*, 100 F.Supp.2d 979 at 982 ("[I]t is axiomatic that the court determines infringement by comparing the allegedly infringing product, not the alleged infringer's patent, to the claimed design.") For this reason alone, Meridian's cross-motion for infringement should be denied.

Further, Meridian disputes Hydro-Photon's proposed claim constructions, and they cannot properly form a basis for comparing claim 7 to the accused AquaStarTM products. *Compare* Defendant Meridian Design, Inc.'s Submission of Its Proposed Claim Construction (Dkt. No. 14) *and* Plaintiff's Statement of Claim Terms Likely to Be in Dispute and Its Proposed Construction of the Same (Dkt. No. 13). There are numerous genuine issues of material fact, which Hydro-Photon has not even addressed in its cross-motion. The following are examples of these genuine issues of fact:

1. The preamble of claim 7 recites that the system is "hand-held." Hydro-Photon asserts that "hand-held" means "capable of being handled and used by hand by a user," stating that the "AquaStar is of a size permitting it to be easily held in the hands of a human user." Hydro-Photon Mem. App. at 1. In contrast, Meridian asserts that this term means that the device

is actually held in the user's hand during operation. As Meridian's Chief Operating Officer Dan Matthews states in his Second Declaration, the AquaStarTM product need not be operated while being held by the user, as opposed the wand-like device described in the '424 patent. Second Matthews Dec. ¶ 11. Thus, whether the accused AquaStarTM products are "hand-held" is a genuine issue of disputed fact.

2. The second claim element requires a "a case with an outwardly extending ultraviolet light source." Hydro-Photon asserts that an "outwardly extending" is a case "having one end within the case and a second opposite end spaced away from the case," while Meridian contends that it is a phrase they may be interpreted by its ordinary meaning. Hydro-Photon asserts that "An ultraviolet lamp extends from one end of the case...." However, the AquaStarTM product caps wholly encase the ends of their ultraviolet lamps. Second Matthews Dec. ¶ 12. Thus, there is a genuine issue of material fact whether the accused product includes a 'case with an outwardly extending ultraviolet light source."

3. The second claim element recites "the light source for submerging in the unsterilized water that is held in the drinking container." Hydro-Photon asserts that "submerging" means "dipping" or "placing." Besides that fact that this limitation is gibberish (i.e., what does the light source submerge in the water?), Meridian contends that the claim requires that the light source be fully immersed in water. Even a casual inspection of the AquaStarTM products establishes that their light sources need not be fully covered by water when used, and this would only occur if the bottle is completely filled with water. Second Matthews Dec. ¶ 13. Further, since the AquaStarTM products do not include a liquid-level sensor, it does not need any water to operate. Hydro-Photon asserts only that "when the case is screwed onto the bottle, and the bottle is *nearly* full with water, the ultraviolet lamp is fully submerged in the

water.” Hydro-Photon Mem. App. at 2. Thus, there is a genuine issue of material fact whether the AquaStarTM products include this claim limitation.

4. The third claim element recites “the control means being contained in the case.” Hydro-Photon asserts that “contained in the case” means “enclosed and protected within the structure from which the light source outwardly extends,” while Meridian contends the same terms means “inside the case.” Hydro-Photon has never denied that the “control means” requires an on-off switch, but can only point to an on-off button that extends from the cover, not one that is inside the case, as is required by the claim language. Hydro-Photon Mem. App. at 2; Second Matthews Dec. ¶ 14 (the on-off switch resides both inside and on the outside of the AquaStarTM cap). There is a genuine issue of material fact regarding this claim limitation as well.

For all of these reasons, Hydro-Photon is not entitled to summary judgment of infringement.

III. CONCLUSION

For all of the reasons set forth herein and in Meridian's opening memorandum, Meridian's motion for summary judgment of non-infringement should be granted, as its AquaStar™ products lack a "control means" as required by claim 7 of the '424 patent, and Hydro-Photon's cross-motion for summary judgment of infringement should be denied.

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Respectfully submitted,

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